

JUN-07-2002 13:55

LACKENBACH SIEGEL LLP



LACKENBACH SIEGEL

Lackenhach Siegel Building
One Chase Road
Scarsdale, New York 10583

09/840212 (See pg #4)

914 723 4301

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9/23/03

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TO: Examiner, R. Popovics

FAX NO.: 1 - 703 - 872 - 9704

DATE: June 7, 2002

FROM: J. HAROLD NISSEN

NO. OF PAGES: 30 (including cover page)

OUR REF.: Colli.P-32RCE

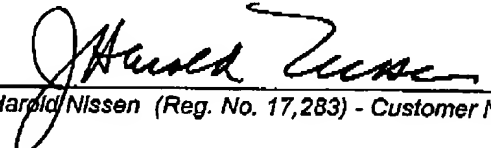
SPECIAL NOTES: This confirms our telephone conversation of
Thursday, June 6, 2002

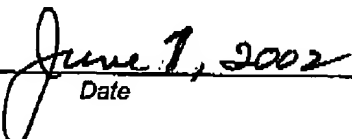
RE: **Inventor:** Paul Hedley DAY
Title: FOLDING BELT FILTER
Filed: February 2, 2000
Serial No: 09/496,982

CERTIFICATE OF MAILING VIA FACSIMILE

I hereby certify that this correspondence is being transmitted by Facsimile to the above-identified Examiner at
Fax No.: (703) 305-9835 c/o The Assistant Commissioner for Patents, Washington, D.C. 20231, on this 7 day
of June 2002.

Applicant hereby petitions that any and all extensions of the term necessary to render this response timely be
granted. Costs for such extension(s) and or any other fee due for the additional claims may be charged to
Deposit Account #10-0100.


J. Harold Nissen (Reg. No. 17,283) - Customer No. 30294


Date

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICECertificate of ~~Receipt~~ *Forsy*

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J. Harold Nissen
J. Harold NissenDated: *June 7, 2002*

Applicant hereby petitions that any and all extensions of the term necessary to render this response timely be granted. Costs for such extension(s) and or any other fee due with this paper, not fully covered by an enclosed check may be charged to Deposit Account #10-0100.

Applicant: Paul Hedley Day
Serial No: 09/840,212
Filed: April 23, 2001
Examiner: Robert J. Popovics
Art Unit: 1723
Title: FOLDING BELT FILTER
Docket: COLLI.P-32

Assistant Commissioner of Patents and Trademarks
Washington, D.C. 20231

LETTER TO THE EXAMINER

Sir:

Transmitted herewith is a copy of a letter dated June 7, 2002 sent to Examiner Mr. R. Popovics in application Serial No. 09/496,982, which

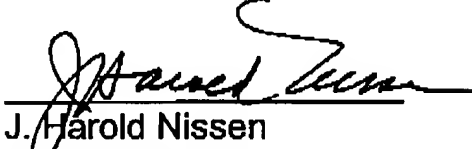
Serial No.09/840,212
Colli.P-32

June 7, 2002

pertains to the Amendment mailed to the Patent and Trademark Office on
February 21, 2002 in this application.

Respectfully submitted

LACKENBACH SIEGEL


J. Harold Nissen
Registration No. 17,283
Customer No. 30294

JHN/ela
Dated: June 7, 2002
One Chase Road
Scarsdale NY 1583
Phone: 914-723-4300

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United States Postal Service as first class mail in an envelope addressed
to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

J. Harold Nissen
J. Harold Nissen

Dated: *June 7, 2002*

Applicant hereby petitions that any and all extensions of the term
necessary to render this response timely be granted. Costs for such
extension(s) and or any other fee due with this paper, not fully covered
by an enclosed check may be charged to Deposit Account #10-0100.

Applicant: Paul Hedley Day
Serial No.: 09/496,982
Filed: February 2, 2000
Examiner: R. Popovics
Art Unit: 1723
Title: FOLDING BELT FILTER

Assistant Commissioner for Patents
Washington, D.C. 20231

LETTER TO COMMISSIONER

Hon. Sir:

This will confirm my telephone interview with Examiner Mr. R. Popovics on
Thursday, June 6, 2002.

This letter is being written in the 09/496,982 application, because it is believed
that this is the application with which the Examiner is concerned for the RCE. A copy
of this letter is also being sent for the 09/840,212 application.

Serial No. 09/496,982
FOLDING BELT FILTER
COLLI.P32RCE

June 7, 2002

A copy of the RCE, filed in this application by attorney Daniel J. Long, of the Sand & Sebolt firm, is being faxed. According to the information in the file, this was mailed on November 21, 2001 to the Patent and Trademark Office. Also being faxed is a copy of Mr. Long's letter to me dated November 26, 2001 in which Mr. Long confirms our discussion about an RCE application. This is the basis for my statement to the Examiner that an RCE application was filed.

As far as applicant's present attorney, the undersigned, is aware, there are two applications on file for this subject matter.

The 09/840,212 is a second filed application and it is this application which uses the term "continuation-in-part", and as the undersigned indicated to the Examiner, I am taking issue with this term as argued in my Petition to obtain the appropriate date chain for the 09/496,982 application.

My reasons for using "continuation" and not "continuation-in-part" is that the amendment was also submitted with a renewed petition is because in my petition I argued that it is imperative to introduce the missing pages without these being considered new matter, and if said pages are not new matter then the application is a continuation.

Based on the above reasoning, if the appropriate date for the materials inadvertently omitted from the 09/496,982 application, then the 09/840,212 is a true

Serial No. 09/496,982
FOLDING BELT FILTER
COLLI.P32RCE

June 7, 2002

continuation and not a continuation-in-part. There was no attempt to mislead, and applicant's attorney apologizes if it appears so. Also, applicant's attorney was under the impression that the matter argued in the Petition did form part of the papers submitted in this application. If for some reason, the Examiner wants a copy of these papers, they will be faxed to the Examiner.

It is also believed that the Examiner referred in the interview to the amendment filed in the 09/840,212 application, and the Examiner has taken issue with my reference to 09/796,982 filed February 22, 2000 and indicates that there is no such application with the indicated filing date, and that the 09/796,982 application belongs to another inventor.

Applicant's attorney has reviewed the Amendment filed in the 09/840,212 application and specifically page 11 of the Remarks. My use of the 09/796,982 and filing date of February 22, 2000 refers to lines 3 and 4 of page 1 of the specification filed in the 09/840,212 application, and all I was attempting to do is to bring to the Examiner's attention the fact that there was an incorrect serial number and incorrect filing date in the preamble. The other matter I was trying to bring to the Examiner's attention was that my primary argument was going to be that this application is a continuation and not a continuation-in-part.

Also, I did reference that a renewed petition was filed. The RCE belongs in the

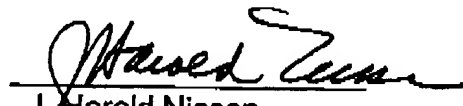
Serial No. 09/496,982
FOLDING BELT FILTER
COLLI.P32RCE

June 7, 2002

09/496,982 file, and a copy of this letter is being sent for the 09/840,212 file because it is applicant's attorney's position that the amendment which the Examiner considers to be non-responsive is in this file.

Respectfully submitted,

LACKENBACH SIEGEL


J. Harold Nissen
Registration No. 17,283
Customer No. 30294

JHN/ela
Dated: June 7, 2002
One Chase Road
Scarsdale, New York 10583
914-723-4300
Enclosures:
Copy of 09/496,982 RCE filed on 2/20/2002
Copy of Daniel J. Long's 11/26/2001 letter

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SAND & SEBOLT
A LEGAL PROFESSIONAL ASSOCIATION

AEGIS TOWER
SUITE 1100
4940 MUNSON STREET, NW
CANTON, OHIO 44718-3615

TELEPHONE: (330) 244-1174
FAX: (330) 244-1173
E-MAIL: INFO@SANDSEBOLT.COM

PATENT, TRADEMARK, COPYRIGHT LAW
& RELATED LITIGATION

JOSEPH A. SEBOLT
FREDERICK H. ZOLLINGER, III
DANIEL J. LONG
LAURA L. BEOGLOS

MICHAEL SAND
JAMES F. MCCARTHY, III
Of Counsel

November 26, 2001

J. Harold Nissen, Esq.
LACKENBACH, SIEGEL, MARZIRLLO,
ARONSON & GREENSPAN P.C.
Lackenhach Siegel Bldg.
One Chase Road
Scarsdale, NY 10583

VIA FEDERAL EXPRESS

RE: U. S. Patent Application
FOLDING BELT FILTER
Serial No.: 09/840,212
Our File: 1624-L-PCT-US

Dear Harold:

Enclosed is the file in the above application.

As we discussed, we filed an RCE and a response to the current office action in the parent application. As we also discussed, I believe that we could also locate an expert that would be able to give us an opinion on the enablement of the disclosure in the parent application if you would like.

Per your request, I also filed an Associate Power of Attorney for you in both applications.

The file for the continuation-in-part application is being forwarded by courier under separate cover.

Please call if you have any questions.

Very truly yours,


SAND & SEBOLT



By: Daniel J. Long

DJL/kih

Enclosures

**Associate Power Of Attorney Or Agent (37 CFR 1.34)
(For Representation Related To A Patent Application)****Docket No.
1624-L-PCT-US**In Re Application Of: **Paul Hedley Day****Serial No.
09/496,982****Filing Date
February 2, 2000****Examiner
R. Popovics****Group Art Unit
1723****Invention: FOLDING BELT FILTER****TO THE ASSISTANT COMMISSIONER FOR PATENTS:**Please recognize the following as ☒ Associate Attorney ☐ Associate Agent In this application.**Name: J. Harold Nissen, Esq.****Reg. No.: 17,283****Address: LACKENBACH, SIEGEL, MARZIRELLO,
ARONSON & GREENSPAN, P.C.
Lackenbach Siegel Bldg.
One Chase Road
Scarsdale, NY 10583****Tel. No. (914) 723-4300**
*Signature of Principal Attorney or Agent of Record***Fred H. Zollinger, III
Reg. No. 39,438
SAND & SEBOLT
Aegis Tower, Suite 1100
4940 Munson Street N.W.
Canton, Ohio 44718
Telephone: (330) 244-1174
Facsimile: (330) 244-1173***Registration Number & Address of Principal Attorney or Agent of Record***Dated: November 26, 2001****I certify that this document is being deposited on
November 26, 2001 with the U.S. Postal Service as first
class mail under 37 C.F.R. 1.8 and is addressed to the
Assistant Commissioner for Patents, Washington, D.C.
20231.**
*Signature of Person Mailing Correspondence***Karen L. Haines***Typed or Printed Name of Person Mailing Correspondence*

**COMBINED AMENDMENT & PETITION FOR EXTENSION OF
TIME UNDER 37 CFR 1.136(a) (Small Entity)**

Docket No.
1624-L-PCT-US

In Re Application Of: **Paul Hedley Day**

Serial No.
09/496,982

Filing Date
February 2, 2000

Examiner
R. Popovics

Group Art Unit
1723

Invention: **FOLDING BELT FILTER**
TO THE ASSISTANT COMMISSIONER FOR PATENTS:

This is a combined amendment and petition under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of May 23, 2001 in the above-identified application.

The requested extension is as follows (check time period desired):

☐ One month ☐ Two months ☒ Three months ☐ Four months ☐ Five months

from: August 23, 2001

until: November 21, 2001

A verified statement of small entity status as a small entity under 37 CFR 1.27:

- ☐ is enclosed.
☒ has already been filed in this application.

The fee for the amendment and extension of time has been calculated as shown below:

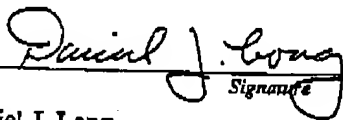
CLAIMS AS AMENDED

	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	15	21	0	x \$9.00	\$0.00
INDEP. CLAIMS	3	3	0	x \$42.00	\$0.00
FEE FOR AMENDMENT					\$0.00
FEE FOR EXTENSION OF TIME					\$460.00
TOTAL FEE FOR AMENDMENT AND EXTENSION OF TIME					\$460.00

**COMBINED AMENDMENT & PETITION FOR EXTENSION OF
TIME UNDER 37 CFR 1.136(a) (Small Entity)**Docket No.
1624-L-PCT-US

The fee for the amendment and extension of time is to be paid as follows:

- ☒ A check in the amount of \$460.00 for the amendment and extension of time is enclosed.
- ☒ Please charge Deposit Account No. 19-0083 in the amount of \$460.00
A duplicate copy of this sheet is enclosed.
- ☒ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.
A duplicate copy of this sheet is enclosed.
- ☒ Any additional filing fees required under 37 C.F.R. 1.16.
- ☐ Any patent application processing fees under 37 CFR 1.17.
- ☐ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No.
A duplicate copy of this sheet is enclosed.

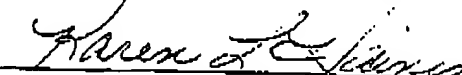

Signature

Dated: November 21, 2001

Daniel J. Long
SAND & SEBOLT
Aegis Tower, Suite 1100
4940 Munson Street N.W.
Canton, Ohio 44718
Telephone: (330) 244-1174
Facsimile: (330) 244-1173

cc:

I certify that this document and fee is being deposited on
November 21, 2001 with the U.S. Postal Service as first
class mail under 37 C.F.R. 1.8 and is addressed to the
Assistant Commissioner for Patents, Washington, D.C.
20231.


Signature of Person Mailing Correspondence

KAREN L. HAINES
Typed or Printed Name of Person Mailing Correspondence

PTO/SB/30 (8/2000)

Approved for use through 10/31/2002 OMB 0551-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000,
provides for continued examination of a utility or plant application
filed on or after June 8, 1995.
See the American Inventors Protection Act of 1995 (AIPA).

Application Number	09/496/982
Filing Date	February 2, 2000
First Named Inventor	Paul H. Day
Group Art Unit	1723
Examiner Name	R. Popovics
Attorney Docket Number	1624-L-PCT-US

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.
NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53 (d) (PTO/SB/28) instead of an RCE to be eligible for the patent form adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE Practice.

1. Submission required under 37 C.F.R. § 1.114.

a. ☐ Previously submitted

i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____
(Any unentered amendment(s) referred to above will be entered).

ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

iii. ☐ Other _____

b. ☒ Enclosed

i. ☒ Amendment/Reply

ii. ☐ Affidavit(s)/Declaration(s)

iii. ☐ Information Disclosure Statement (IDS)

iv. ☐ Other _____

2. Miscellaneous

a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required)

b. ☐ Other _____

3. Fees

The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 19-0083

i. ☒ RCE fee required under 37 C.F.R. § 1.17(e)

ii. ☐ Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)

iii. ☐ Other _____

b. ☒ Check in the amount of \$ 370.00 enclosed

c. ☐ Payment by credit card (Form PTO-2038 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Daniel J. Long	Registration No. (Attorney/Agent)	29,404
Signature	<i>Daniel J. Long</i>	Date	November 21, 2001

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Name (Print/Type)	Karen L. Holmes	Date	November 21, 2001
Signature	<i>Karen L. Holmes</i>		

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND Fees and Completed Forms to the following address: Assistant Commissioner for Patents, Box RCE, Washington, DC 20231.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Paul Hedley Day

Serial No: 09/496,982

Examiner: R. Popovics

Filed: February 2, 2000

Art Unit: 1723

For: FOLDING BELT FILTER

Docket: 1624-L

Assistant Commissioner of Patents and Trademarks
Washington, D.C. 20231
BOX FEE AMENDMENT

AMENDMENT "A"

In response to the Office Action dated May 23, 2001, please amend the above-captioned application as follows.

In the Specification:

After page 4, add pages 5 - 10 on the attached sheets.

Remarks**Introduction**

The application has been amended to comply with formalities noted by the examiner. Reconsideration is respectfully requested.

Rejection under 35 USC § 112

Applicant requests withdrawal of the rejection of claims 1 - 13 and 20 - 21

under 35 USC § 112, first paragraph. Applicant contends that one of ordinary skill in the art could easily understand the construction and operation of the apparatus of the present invention with reference to pages 1 - 4 and 11 - 17 of the specification and claims and the drawings. The addition of pages 5 - 10 to the specification is being done to comply with the formalities noted by the examiner and not because such pages would be necessary for one of ordinary skill in the art to understand the apparatus of the present invention and the method of its operation.

Rejections Under 35 U.S.C. § 102

Claims 1-12 and 20-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent no. 4,017,378 to Hartmann et al. (hereinafter "Hartmann et al"). This ground for rejection is traversed as follows:

Applicant again points out that Hartmann et al. discloses an apparatus for continuous separation of solid-fluid mixtures comprising means for routing an endless band of filter cloth folded to form an endless tube which is longitudinally openable and closable to permit introduction of a mixture into the tube for filtering, and removal of solids following filtering. Means for introducing a mixture into the tube are followed by a filter unit which is adjustable in cross sectional flow area. The inlet means and filter unit are assembled on a first frame. A second frame outfitted with means for opening the tube for discharge of solids follows. The two frames are separable to provide a modular construction. Press units, also of modular construction, can be interposed between said frames, also as modules, and means are provided for adjusting the pressure exerted by the press units.

The present invention proposes the idea of arranging a continuous belt so that at a commencement end, the shape of the belt together with its relative position is such that there will in effect be a holding volume which will be closed at one end by a coming together of facing surfaces of one or more of the belts. In other words, instead of maintaining essentially a flat bed on which the material is preliminary introduced, this filter approach shapes this belt together with this orientation. While

two belts are possible, it is found in practice that one belt is most desired provided that it has a central part that can fold on a repeated basis. If two belts are used, they become the equivalent of a single belt because they are held with two edges together which provides the effect of a closure and they are brought together in the same way as described with the single belt.

The advantage of this arrangement is that contrary to an introduction being a flat belt where any sludge to be dewatered being deposited on the flat surface limits the amount of material and the rate at which the material can be thus fed. The present invention proposes this somewhat triangular holding shape which can be filled up and maintained filled which, of course, then assists in capacity. None of these features are taught or suggested by Hartman et al.

Claims 1-12 and 20-21 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,520,824 to Sasaki (hereinafter "Sasaki"). This ground for rejection is traversed as follows.

Applicant again points out that Sasaki discloses a method and apparatus for separating a solid liquid mixture by wringing a twisted filter belt enclosing the mixture. The solid content and liquid content in the solid-liquid substance can be separated continuously at a high solid-liquid separation ratio by causing a looped filter cloth member to travel, the filter cloth member being wound at least once around a wringing roller, and having a twisted portion at which the filter cloth member is twisted at least once and wound around the wringing roller; inducing a primary rotary motion of the wringing roller in a direction in which the filter cloth member travels; inducing secondary rotary motion of the wringing roller in a direction in which the filter cloth member is twisted upstream with respect to the wringing roller; and supplying a solid-liquid substance to an upstream portion of the filter cloth member with respect to the wringing roller.

Referring to Fig. 1 of Sasaki, where the material is fed onto the belt, it will be seen that this is fed directly onto a belt that is at the first stage essentially flat except that a right hand side is caused to rise and downstream, of course, it is caused to

be twisted in the manner described. The question is what would happen to sludge as it is deposited at the beginning and whether this is the same as or different from the proposal of the present invention. There is no suggestion in Sasaki that the facing surfaces should come together but rather it would appear that there is intended to be an overlapping rolling alignment of the parts of the belt so that there would essentially remain a hollow inner core. It is difficult in some of the drawings to establish whether the right hand side of the belt, as shown in the first drawing which is Fig. 1, is intended to be higher or lower than the horizontal alignment of the belt although Figures 4 and 5 would suggest rather strongly that there would be some lifting of the belt rather than lowering. The Sasaki arrangement causes the belt to roll around into an overlapping cylinder, achieves a different answer and would not appear to teach, in any way, an introductory arrangement which allows for a greater quantity of material to be loaded onto the belt because of its shape and position.

If we now refer to Hartmann, again it is relatively difficult to see where this provides, in any sense, the same feature as the present invention. There is described the characteristic of the filter cloth and perhaps column 5, lines 22 through 34 are as good a description of the arrangement as might be found.

What it points out is that the filter cloth canopy tube-like manufactured or closed in itself but is has to be a flat cloth, forming a continuous belt-like loop and then folded into a tube or something similar.

This is in complete contradiction to the present invention where we are talking about a belt itself defining a receiving shape where the belt is brought so that facing surfaces come together at an end of that shape and from there, there is effected the nipping pressures to effect the dewatering.

What is not the concept of the present invention is to provide a tube and we suggest that Hartmann and, indeed, Sasaki in a slightly more sophisticated manner, both provide a tube which is essentially an overlapping type shape which is different from the present invention.

Given the above, the apparatus submit that the present invention is neither taught or suggested by Sasaki, either alone or in combination with Hartmann.

In establishing a prima facie case of anticipation under 35 U.S.C. § 102, the Examiner must find every element of the applicant's claim in a single reference; other references may be used only to interpret the allegedly anticipated reference. Studiengesellschaft Kohle, m.b.H. v. Dart Industries, Inc., 726 F. 2d. 724, 220 USPQ 841 (Fed. Cir. 1984). This idea was similarly upheld in Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F. 2d. 1565, 18 USPQ 2d. 1001, 18 USPQ 2d. 1896 (Fed. Cir. 1991), wherein the Court held "that invalidity for anticipation requires that all the elements and limitations of the claims be found in a single prior art reference."

Rejections Under 35 U.S.C. § 103

Claims 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over either Hartmann et al. or Sasaki. Thus grounds for rejections is traversed as follows.

As is outlined above, the apparatus and method of the present invention are completely different from solid and liquid separating devices and methods heretofore used. Because of the unique feature of the apparatus and method of the present invention, it would be incorrect to conclude that features of belts used in a completely different way would be obvious when used in the unique way taught by the Applicant.

The applicant respectfully points out that nothing in a conventional belt with an edge reinforcement would suggest that the belt of the present invention could be folded about a narrow middle portion in the way that is recited in claim 13.

In establishing a prima facie case of obviousness under 35 U.S.C. 103, it is incumbent upon the examiner to provide a reason why one having ordinary skill in the art would have been led to modify a prior art reference to arrive at the claimed

invention. The requisite motivation must stem from some teaching, suggestion or interest in the prior art as a whole or from knowledge generally available to one having ordinary skill in the art. See Uniroyal, Inc. v. Rudkin Riley, Corp., 837 Fed. 2d. 1044, 5 USPQ 2d. 1434 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resin And Refractories, Inc., 776 F. 2d. 281, 227 USPQ 657 (Fed. Cir. 1985).

Where claimed subject matter has been rejected as obvious in view of a prior art reference, a proper analysis under § 103 requires consideration of two factors; (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composite or device or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out the invention those of ordinary skill would have a reasonable expectation of success. See In re Dow Chemical Company 837 Fed. 2d. 469, 473, 5 USPQ 2d. 1529, 1531 (Fed. Cir. 1988). both the suggestion and the reasonable expectation of success must be found in the prior art, not in the applicant's disclosure.

It is applicant's position that such suggestion and/or reasonable expectation of success could not be found in the cited reference.

The Patent and Trademark Office Board of Patent Appeal and Interferences stated the following in Ex parte Clapp, 227 USPQ 972 (1985), at page 973:

"Presuming arguendo that references show the elements or concepts urged by the Examiner, the Examiner has presented no line of reasoning, and we know of none, as to why the artist when viewing only the collective teachings of the references would have found it obvious to selectively pick and choose various elements and/or

concepts from the several references relied on to arrive at the claimed invention. In the instant application, the Examiner has done little more than cite references to show that one or more elements or some combinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to the combination of elements. That is to say, applicant does not claim that he has invented one or more new elements but has presented claims to a new combination of elements. To support the conclusion of the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination where the Examiner must present a convincing line of reasoning as to why the artist would have found the claimed invention to have been obvious in light of the teaching of the references."

With the above directives, consideration must be given as to whether the reference in the manner set forth in the Office Action is proper to render the applicant's invention obvious in view thereof.

As set forth hereinabove, it is applicant's contention that the reference does not suggest, nor does it teach the combination as set forth in now amended Claim 1, as is evident from the plurality of differences between applicant's invention and the cited art set forth hereinabove. Again, the reference must teach the alleged combination to render applicant's invention obvious under 35 U.S.C. 103. The CAFC in the recent case of In re Fine, 5 USPQ 2d. 1596, 1988 stated beginning at page 1599 that:

"Obviousness is tested by "what the combined teaching of the references would have suggested to those of ordinary skill in the art." In re Keller, 642 F. 2d. 413, 425, 208 USPQ 71, 881 (CCPA 1981). "But it cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hospital Sys., 732 F. 2d. at 1577, 221 USPQ at 933. "Teachings of references can be


combined only if there is some suggestion or incentive to do so." Id.
Here, the prior art contains none.

In view of the foregoing, the instant application is believed to be in condition for allowance and, therefore, an early issuance thereof is earnestly solicited.

If the examiner believes that a telephone interview would be beneficial to advance prosecution of the instant application to early issue, he is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted at Canton, Ohio, on on this 21st day of November, 2001.


SAND & SEBOLT


By: Daniel J. Long
Reg. No. 29,404

Aegis Tower, Suite 1100
4940 Munson Street N.W.
Canton, OH 44718
Telephone: (330) 244-1174
Facsimile: (330) 244-1173
DJL/klh
Attorney Docket: 1624-L

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to
Assistant Commissioner for Patents
Washington, D.C. 20231
BOX FEE AMENDMENT
on this 21st day of November, 2001.


Karen L. Haines

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is a combination of air and water used. In a further case there is provided a vibrator which can also be used in combination with the other forms of cleaning.

5 In a further form of the invention there is provided a belt for use with the belt filter as described above. One of the characteristics of the belt is that it shall fold flat or substantially flat at a nipping location. This requires a different characteristic at a middle lengthwise alignment of the belt than the remainder of the belt namely that this shall be sufficiently pliable for the purpose whereas the remainder of the belt should be relatively stiff.

10 In preference then there is provided a filter belt for this application which has a medial part which is more pliable than remaining parts of the belt.

In preference, said belt filter includes additional support means such as internal wires embedded around the edges of said belt to provide support for the belt and any additional weight that it carries.

15 In a further form the invention can be said to reside in a method of drying sludge or slurry type materials which comprises placing materials to be pressed on a belt portion then conveying the belt portion to a folding zone where a middle of the belt is lowered below the respective two sides of the belt, and effecting a compression by urging the respective upper surfaces of the sides one against the other to thereby apply pressure to material therebetween.

20 BRIEF DESCRIPTION OF THE DRAWINGS

To better understand the invention it will now be described with reference to preferred embodiments which will be described with the assistance of drawings wherein:

25 Fig. 1 is a perspective view of a first embodiment of the invention;

Fig. 2 is a side cross sectional view of the first embodiment as shown in Fig 1;

Fig. 3 is a top view of the first embodiment as shown in Fig. 1;

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Fig. 4 is an exploded perspective view of the first embodiment as shown in fig. 1;

Fig. 5 is a partial perspective view showing the folding of the belt;

Fig. 6 is a partial perspective view showing the reinforcing of the belt;

Fig. 7 is a second embodiment of the invention;

Fig. 8 is a partial perspective view of a third embodiment of a belt;

Fig. 9 is a perspective view of a fourth embodiment without collection trays;

Fig. 10 is a side elevation of the fourth embodiment as shown in Fig. 9 with the addition of collection trays and the belt being shown in outline;

Fig. 11 is a plan view of the fourth embodiment, with the belt and some rollers being shown in dotted outline;

Fig. 12 is a perspective view of only the belt and rollers of the fourth embodiment; and

Fig. 13 is a schematic drawing illustrating a deflection test arrangement to establish comparative reflectivity of sides of a belt as compared to a middle portion of the belt.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the first embodiment as shown in Figs. 1 through to fig. 4 a belt filter 10 has a continuous endless filter belt 12 which is supported and arranged to be driven around rollers 14, 16 and 18 by one of the rollers. The belt 12 is positioned to extend substantially horizontally around rollers 14, 16 and below roller 18. The belt 12 is further supported so as to fold upon itself about a middle part of the belt 12 as it proceeds to roller 20.

In this way, the belt 12 defines between the respective rollers 14 and 20 a supporting cavity or area 22 within which can be placed a liquid sludge or slurry to thereby define a working volume.

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Accordingly, between rollers 14 and 20 the belt 12 changes from a substantially horizontal orientation to an orientation that is substantially upright with the edges of the belt being at approximately the same height but with the middle of the belt being lowered to therefore provide that the cavity 22 is an upwardly open shape with a vertical compression zone forming a part of the wall defining the cavity shape.

The belt 12 is driven by the drive means to move around roller 14. Material to be filtered and deliquified is fed into the cavity 22. Slurry that behaves like low viscosity fluid flows to fill the cavity and is initially constrained within it by the shape formed by the belt 12. The belt 12 is made from a suitably permeable material that allows some of the liquid to flow through it but also to build up a filtering effect from retained solids.

Thereby, the cavity 22 becomes the first deliquifying zone where some of the liquid drains through the filter belt by gravity to be collected by a suitable means such as a tray (not shown) under cavity 22. The height of liquid in the cavity 22 can be measured and maintained by level measuring means such as a float controlled valve which is used to control an extent of further introduction of slurry into the cavity 22. Further, because the cavity can be kept to a maximum and further therefor, the amount of slurry or at least solids from the slurry being engaged between engaging nipping surfaces of the belt can also be kept to a maximum level.

The convergence of the sides of the belt in cavity 22 causes the material wedged between the belt sides to be compressed on its approach to roller 20 which assists to deliquify the material. Further deliquifying is effected as the belt 12 is caused to pass around roller 20 and further around rollers 26 and 28. The material that is captured within the folded belt experiences compression and shear that causes more liquid to pass through the belt to be collected by a suitable means such as a tray (not shown) beneath these rollers.

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The two sides of the belt are then unfolded to change from being in a substantially upright position to being substantially horizontal. The deliquified solids materials are then carried over roller 16 and fall or are scraped by a scraper (not shown) from the belt.

5 One of the problems with an arrangement using a single belt is that the distance between respective parts of the belt from where it passes over a first horizontal and straight roller to where the belt is folded upon itself is not the same. This has meant that in practice there can be some curvature associated with folding a belt between the respective locations. Fortunately when a
10 curvature occurs the curvatures that result assist the process of capture of solids into the nip.

In particular, there are advantages where there are a bulging of facing surfaces between the edges and the folded middle at the first nipping location. This also for a more compiles shape to develop which is tighter at both an upper
15 and lower end than in the middle but this is found to allow for more solid material to enter the nipping area and to be held against side protrusion.

Other embodiments may equally well be used to improve the efficiency of the invention.

20 Fig. 4 show simple slides for adjustment of the position and angle of rollers 14, 16, 18, 20, 26 and 28. This offers a method to adjust the tension on the belt and to adjust the tracking of the belt so it maintains a selected path around the rollers 14, 16, 18, 20, 26 and 28. A screw 32 allows more precise adjustment of the tension and tracking of the belt.

25 Figs. 5 and 6 show a belt that may be used in this invention. Fig. 5 shows the belt when it is in a folded upright position. Fig. 6 shown an embodiment of the apparatus whereby the belt is suitably reinforced in the center or the center flexing section is replaced by a more suitable flexible material, such as plastic

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or rubber, with the final choice of material dependent on application. Reinforcing may also equally well be applied to the sides or edges of the belt (not shown).

5 The compressive and shear forces on the material within the belt affect the efficiency with which material is deliquified. These forces depend upon many factors predominantly belt tension but also the diameter of the vertical rollers, and their relative positions have influence. The number of vertical rollers also has a bearing on the efficiency of the deliquifying.

10 Fig. 7 shows an embodiment of the apparatus whereby vertical rollers of different diameters are used, and they are placed in various relative positions. Feed material is transferred into cavity 22 where it is dequalified by gravity and compressed as the belt folds on itself and moves toward roller 20. In some applications roller 20 may be the only roller necessary (such as the deliquifying of sand). However, most applications will require more than the one roller to achieve the desired efficiency. Fig. 7 thus shows an embodiment of a folding
15 belt filter employing some 7 vertical rollers. It is t be understood that this invention though is not limited to any particular number of vertical rollers or their relative size and spacing.

20 Fig. 8 shows a further embodiment of the invention whereby roller 48 assists the vertical distribution of material within the belt. Heaver solids in the material to be deliquified at times may settle to the bottom of the cavity 22. This can place an unnecessary strain near the fold of the belt as it moves around the vertical rollers and the heavy material tends to bulge the belt where it accumulates near the fold. Roller 48 acts in combination with roller 20 to form
25 a pair of pinch rollers that smooth the profile of the material constrained withing the folded belt thereby reducing the strain on section of the belt, improving the tracking of the belt and raising deliquifying efficiency of some materials.

Now referring to Figs. 9 through 12 there is shown a more developed machine than in the previous first embodiment and accordingly there is shown

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a from 55 with ground engaging supporting wheels 55a which supports a plurality of rollers 56 and 57 which control the passage of belt 58 through respective zones. A first zone 59 is a collection zone where the belt 58 is caused to change its shape from a planar belt to a belt that is folded together to have previously uppermost surfaces of sides 60 and 61 engage substantially against each other to effect a nipping compression effect thereby. This zone 59 has therefore the endless belt 58 shaped so as to provide an uppermost open cavity into which liquids (containing solids to be separated) can be poured.

With a shape such as this with a level of the surfaces of the belt 58 at an introduction to the zone 59 being substantially maintained by edges 62 of the belt up to the nipping zone 63 the level of liquid which will contain the solids to be separated can be kept high and therefore increase efficiency of any separation effect.

The belt 58 has two sides 60 and 61 separated by a middle portion 64 which is more pliable than the sides 60 and 61 so that the belt 58 will easily and without damage fold about this middle portion as it is driven into the nipping zone 63.

The nipping zone 63 includes a plurality of rollers 57 which are approximately vertically aligned or at least they have their axes at 90 degrees to that of the other rollers. Beneath the respective zones are collection trays shown as 63a especially in fig. 10.

Subsequent to the nipping zone 63 the belt 58 is then unfolded at the unfolding zone 65 where solids that have been subjected to compressing forces are now relieved of these. The result is that the belt 58 will now carry over to the end most lateral roller of the group at 66. It is here that a scraper is most conveniently located to remove the compressed solids.

The belt 58 then continues through a cleaning zone 67 where a water spray (a combination of air and water can be also used) which is not specifically

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shown will be positioned to force water back through the weave of the belt 58 to clean this of retained finer particles. The belt 58 then passes around drive roller 68 with drive motor 69 and tightener roller 70. This roller 70 is adjustable through adjuster 71.

5 The roller 68 has a camber to assist in keeping the belt 58 in line through its path. Selection of appropriate types of belt which are generally known and referred to as filter belts will also assist as will the selection of an appropriate pliable middle portion. Such selection goes also to selection of joining arrangements so that a join can be sealed off to ensure that liquid does not pass
10 uninterrupted therethrough.

 Finally in Fig. 13 there is shown a simple cantilever test rig as would be apparent to one of ordinary skill in the art using reasonable experimentation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Paul H. Day

Serial No: 09/496,982

Examiner: R. Popovics

Filed: February 2, 2000

Art Unit: 1723

For: FOLDING BELT FILTER

Assistant Commissioner for Patents
Washington, D.C. 20231**Supplement to Request for Reconsideration of
Petition to Convert under 37 CFR § 1.182**

Applicant supplements his Request for Reconsideration of Petition to Convert under 37 CFR 1.182 with the following information.

Applicant has begun negotiations toward the licensing of his invention in the United States. Applicant believes that favorable action on his Petition and the issuance of a United States patent on his invention will substantially contribute to the success of his licensing negotiations and to making a valuable new technology available to the United States public. An unfavorable action would accordingly result in hardship to the applicant.

Applicant again requests that the difference between the filing fee due under 35 USC § 371 and 35 USC § 111, or any other additional fee due be charge to deposit account number 19-0083.

Respectfully submitted at Canton, Ohio this 2nd day of October, 2001.

SAND & SEBOLT



By: Daniel J. Long
Reg. No. 29,404

Aegis Tower
Suite 1100
4940 Munson Street N.W.
Canton, Ohio 44718-3615
Telephone: (330) 244-1174
Facsimile: (330) 244-1173
DJL/klh
Attorney Docket: 1624-L-PCT-US